AMENDMENTS TO THE SPECIFICATION

Please amend paragraph [0023] beginning on page 6, as follows:

[0023] FIG. 5 is a schematic block diagram of the near infrared light emitter module of FIG. 2, wherein direction arrow 92 is pointed normally out of the plane of the drawing sheet and direction arrow 94 is pointed parallel to the plane of the drawing sheet.

Please add new paragraph [0023.1] beginning on page 6, as follows:

[0023.1] FIG. 5A is the schematic block diagram of the near infrared light emitter module of FIG. 2 corresponding to the schematic block diagram of FIG. 5 rotated 90° about horizontal, wherein direction arrow 94 is pointed normally into the plane of the drawing sheet and direction arrow 92 is pointed parallel to the plane of the drawing sheet.

Please amend paragraph [0028] beginning on page 7, as follows:

[0028] Referring now to the drawings, and particularly to FIG. 1, there is shown a person 10 seated on the front-outboard seat 12 of a vehicle 14. As shown, person 10 is properly seated on seat 12, with his hips and back placed against the back of the seat, and with the seat set at a safe distance spaced from the dashboard 20 of vehicle 14. Also illustrated on FIG. 1 is an alternative arrangement in which an infant 16 is seated in a rear facing infant seat 18, clearly within the at-risk zone.

Please amend paragraph [0030] beginning on page 7, as follows:

[0030] Also mounted in console 24 is a receiver module in the form of a video camera 32. Camera 32 receives optical energy in the form of IR or NIR radiation scattered or otherwise reflected by objects in the front of the passenger compartment of the vehicle. After receiving such a video stream, camera 32 generates a photographic image and/or photographic data associated with the passenger compartment 42 of the vehicle 14. Since the emitter module 30 projects multiple beams simultaneously, a camera is needed to provide sufficient spatial resolution to distinguish each individual beam in the image plane. The system recognizes occupant type, as well as occupant position and posture, with dynamic occupant position being determined using triangulation for all the beams in a single frame. In addition to the depth information obtained through triangulation, the camera also provides two-dimensional images of the occupants. The combination of the two-dimensional images and the related depth (target range) are then used for robust classification and position recognition.

Please amend paragraph [0031] beginning on page 8, as follows:

[0031] FIG. 2 is a schematic block diagram of an automotive occupant position restraint system 22 of the present invention, of which modules 30, 32 of FIG. 1 are a part. System 22 also can include a control module 34 and an inflatable restraint deployment module 38. An algorithm within control module 34 uses the photographic image and/or photographic data and possibly other data from receiver module 32 to decide whether the inflatable restraint, i.e., air bag 60 (FIG. 3), should be allowed to deploy in the event of the vehicle being involved in a collision. After making this decision, control module 34 can send a signal indicative of the decision to inflatable restraint deployment module 38.

Please amend paragraph [0032] beginning on page 8, as follows:

[0032] Modules 30 and 32 are electrically connected to control module 34 which classifies person 10 in passenger compartment 42 and determines if the person is out of the at-risk zone and is not seated in a rear facing infant seat. In this case, person 10 is safely seated and, accordingly, control system 34 will enable the air bag (not shown in FIG. 1) associated with the front-outboard seat, so that the air bag can be deployed in case an accident occurs. Control module 34 can also cause a display 40 (FIG. 1) to provide an indication that the air bag is enabled. As noted above, if display 40 should indicate that the air bag is suppressed, then person 10 or the driver of vehicle 14 would have the opportunity to take corrective measures.

Please amend paragraph [0034] beginning on page 9, as follows:

[0034] FIG. 4 illustrates the potential consequences of a person disposed within the at-risk zone. Here, a person 70 is seated on a front-outboard seat 72 in a vehicle 74. Person 70 is properly seated on seat 72, with his hips and back against the back of the seat; however, in this case, the seat has been moved too far forward, thus placing part of the body of the person 70 within an at risk-zone 80. Thus, in this case, deployment of an air bag, such as air bag 60 (FIG. 3) has the potential of causing serious injury or death to the person 70 and again, in fact. there have been reported instances of such injury or death. Proper operation of restraint system 22 (FIG. 2) will suppress deployment of the air bag 60 and will alert person 70 and the driver of vehicle 74 to the potential hazard. In this case, person could simply move seat 72 rearwardly to place himself outside of at-risk zone 80. The position sensing system would then enable the air bag 60, and display 40 (FIG. 1) would indicate enablement of the air bag 60.

Please amend paragraph [0035] beginning on page 9, as follows:

[0035] The novel emitter module 30 of the present invention will now be described in more detail. ~~Emitter~~ Referring to FIG. 2 and FIG. 5, the emitter module 30 includes an optical energy source, which can be in the form of a laser 82. Laser 82 transmits near infrared light through a diffractive optical element, which can be in the form of a diffraction grating 84. As more clearly indicated in FIG. 5, Laser 82 emits a collimated light beam 86 which diffraction grating 84 expands into an array of lower power near infrared light beams 88 spanning over an arc of approximately 60°. Diffraction grating 84 is disposed in a path of light beam 86.

Please amend paragraph [0038] beginning on page 10, as follows:

[0038] ~~The~~ Referring to FIG. 5, the light beams 88 can be evenly spread apart such that each beam 88 is separated from each adjacent beam 88 by an angle 96 of approximately 5°. That is, thirteen beams 88 can be spaced 5° apart to thereby span an arc of approximately 60°. Although not shown in the drawings, there can be a divergence within each beam 88 of approximately 0.5°. That is, an outer envelope of each beam 88 can be cone-shaped with an internal angle of the envelope being approximately 0.5°.

Please amend paragraph [0039] beginning on page 10, as follows:

[0039] As discussed above, it is desirable for the light beams 88 to span an arc of greater than 60° in order to sense a wider area within the passenger compartment 42. According to the present invention, a second optical element is used to expand the arc of the array of light beams ~~88~~ 89 from approximately 60° to approximately 120°. More particularly, in the embodiment of FIG. 5, the array of light beams ~~88~~ 89 is fanned out to approximately 120° by a lens arrangement 98 disposed in a path of light beams ~~88~~ 89. The 120° angle over which beams 88 are spread after lens 98 can be coplanar with the

60° angle over which beams 88 are spread before lens 98. Similarly to diffraction grating 84, lens 98 can evenly spread out the array of light beams 88 in both direction 94 across the page of FIG. 5 and in direction 92 into the page of FIG. 5. Thus, lens 98 can fan out the array of beams ~~88~~ 89 in an arc of approximately 120° both in direction 92 and in direction 94. Although the diameter of each individual ~~beam 88~~ beams 88/89 may be enlarged or expanded by passing through lens 98, this expansion is not harmful as long as adjacent beams ~~88~~ 89 do not merge together.

Please amend paragraph [0040] beginning on page 11, as follows:

[0040] After passing through the lens 98, the light beams ~~88~~ 89 can be evenly spread apart such that each beam ~~88~~ 89 is separated from each adjacent beam ~~88~~ 89 by an angle 100 of approximately 10°. That is, thirteen beams ~~88~~ 89 can be spaced 10° apart to thereby span an arc of approximately 120°. Thus, an optical system 102 including diffraction grating 84 and lens 98 can fan out a light beam 86 into 169 beams ~~88~~ 89 spanning a 120° arc in direction 92 and spanning another 120° arc in direction 94. The 120° arc span is an approximation, and could include other values such as 90° to 150° without departing from the spirit of the invention.

Please amend paragraph [0044] beginning on page 12, as follows:

[0044] Beam splitter 134 is disposed in a path of light beam 86 from laser 82. Light beam 86 enters prism 138 at a right angle to a side 142 of prism 138. Upon impinging upon coating 140, beam 86 is split into two beams 187, 189 of equal power. Beam 189 ~~deflects~~ reflects from coating 140 at an angle of 30°, which is equivalent to the angle at which beam 86 approaches coating 140. As beam 187 continues through coating 140, an angle of approximately 60° is formed between beams 187, 189.

Please amend paragraph [0045] beginning on page 12, as follows:

[0045] Attached to respective sides of prisms 136, 138 are diffraction gratings 184 which may each be similar to diffraction grating ~~84~~ 184. Each diffraction grating 84 is disposed in a path of a respective one of beams 187, 189. Similarly to diffraction grating 84, diffraction gratings 184 expand respective beams 187, 189 into arrays of lower power near infrared light beams 188 spanning over arcs of approximately 60° in both directions 92 and 94.

Please amend paragraph [0050] beginning on page 13, as follows:

[0050] Adjacent end beams 288a from each of the two arrays are parallel to each other. Thus, the two arrays effectively and conjunctively form one larger array spanning an angle of approximately 120° in direction 94. As the individual beams 288 get farther apart from each other as they progress into the passenger compartment, the constant, relatively smaller distance 290 between end beams 288a causes the two end beams 288a to effectively function as a single beam. Thus, the two arrays effectively form one larger array of twenty-five beams 288 spread apart by angles 292 of 5° to thereby span an angle of 120° in direction 94. The larger arrays of beams 288 formed by the two smaller arrays can be spread out over an angle of approximately 60° in direction 92 into the page of FIG. 8.